Patient-Provider Ethnic Concordance and Patient Satisfaction:

An Updated Review

By

Eze Okeagu

A Master's Paper submitted to the faculty of the University of North Carolina at Chapel Hill in partial fulfillment of the requirements for the degree of Master of Public Health in the Public Health Leadership Program

Chapel Hill

2014

Abstract

Over the last decade, patient's health care experience has become a valuable metric. Studies suggest that relative to white patients, non-white patients tend to be less satisfied with their health care experience. Researchers have studied patient-provider ethnic concordance as a means to address these racial differences in patient satisfaction. A systematic review was performed to determine if patient-provider ethnic concordance is associated with greater patient satisfaction. The evidence is inconclusive because the literature has various methodological limitations. As a result, the body of evidence's strength is poor. Future studies will require validated patient satisfaction measurement tools and comprehensive statistical analyses to clarify the association between patient-provider ethnic concordance and patient satisfaction.

Introduction

From Paternalism to Patient-Centered

As health care costs continue to rise, America will have to rely on cost-effective health care models. This task is challenging because America must reduce health care cost while also enhance health care quality. In the end, the hope is to improve the population's health. This Triple Aim, although daunting, is requisite to addressing America's health care issues. Over the last few decades, policymakers have offered the patient-centered care model as a solution.

In Crossing the Quality Chasm, the Institutes of Medicine stated that quality health care should aim to be patient-centered (Institute of Medicine, 2001). The report defined patient-centered as "providing care that is respectful of and responsive to individual patient preferences, needs, and values, and ensuring that patient values guide all clinical decisions" (Institute of Medicine, 2001). Thus, an important part of health care quality is insuring that patients feel valued and respected.

The importance of patient experience

As can been observed from the IOM's definition, patient centered care should be responsive to the individual patient's preferences, needs, and values. Today's health care providers need to be cognizant of patients' health care experiences. Patient centered care cannot exist without first acknowledging the importance of the patient's experience. If health care is viewed as a business, then patients are the customers. As with any business, customer satisfaction contributes to a business' success.

More patient-centered and personalized care is associated with higher patient satisfaction (Cleary & McNeil, 1988). To provide patient centered care, physicians must know what determines a patient's health care experience. They need to know the things that make patients more satisfied with their health care. Various studies have demonstrated that physicians are poor assessors of patient experience (Cannon & Usherwood, 2007; Merkel, 1984; Rashid, Forman, Jagger, & Mann, 1989). As a result, patient satisfaction surveys are becoming a prominent component of the health care system and are beginning to change its structure.

The Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey is 32 item questionnaire about patients' ratings of their health care experiences (Centers for Medicare and Medicaid Services, 2014). By publicly reporting the results, this survey will increase health care transparency. As a result, hospitals with lower ranking will be incentivized to improve their health care quality. In the last year, patient satisfaction surveys have begun to determine Medicare reimbursement models.

Through, its Hospital Value Based Purchasing program, 30% of bonus reimbursements will depend on the patient's experience of care (Centers for Medicare and Medicaid Services, 2011). In this program, patient experience of care will contribute more to a hospital's reimbursements than clinical process of care and efficiency (Centers for Medicare and Medicaid Services, 2011). It is evident that tomorrow's health care providers will be required to provide patient-centered care and be concerned about patient satisfaction.

Racial Differences in Patient Satisfaction

Patients will not always be satisfied with their health care providers or general health care. Many factors determine a patient's health care experience. Long wait times and expensive co-pays can make patients dissatisfied with their health care. When health care providers refuse to give an unwarranted medication, this refusal can make patients dissatisfied with their health care. No one expects patients to always be satisfied with their health care. It is both natural and healthy for a level of patient dissatisfaction to exist within a health care system.

It is not concerning if this dissatisfaction is evenly divided among the patient population. It is concerning if one patient group is disproportionately more dissatisfied with their health care relative to other groups. If racial differences in patient satisfaction exist, this difference may point to a problem within the health care system.

One study demonstrated that racial differences in patient satisfaction exist. Blendon et al demonstrated that relative to Whites, African-Americans were less likely to be satisfied with their last hospitalization (57.5 vs 77.4 P<.01) (Blendon, Aiken,

Freeman, & Corey, 1989). Another study showed that relative to Whites, Asian Americans were less satisfied with their health care (OR = .53 95% CI .37 - .78) (Saha, Arbelaez, & Cooper, 2003). If these figures are valid, policy makers will have to determine how to address these racial differences in patient satisfaction.

Patient-Provider Ethnic Concordance as a Potential Solution

Dr. Lisa Cooper's work suggests a possible means to addressing the racial differences in patient satisfaction. In 2003, she released a seminal study that looked at the association between patient-provider ethnic concordance and patients' satisfaction with their health care providers. Her study demonstrated that patients in racially concordant visits were more likely to agree with the statements, "Overall, I was satisfied with this visit" (.72 vs .51 in discordant groups) and "I would recommend this physician to a friend" (.72 vs .58 in discordant groups) (Cooper et al., 2003). This finding was true for both Caucasian and African-American patients. Even after adjusting for the communication behaviors in the visit, this association was still statistically significant (.73 vs .57 P = .03) (Cooper et al., 2003).

Two other studies found a similar association between patient-provider ethnic concordance and patients; satisfaction with their health care providers (Laveist & Nuru-Jeter, 2002; LaVeist & Carroll, 2002). One study found that the association was present for African-Americans, but not for Latino patients (OR 2.40 95% CI 1.55-3.72) (OR .91 95% CI .57 – 1.45) (Saha, Komaromy, Koepsell, & Bindman, 1999). Another study demonstrated that patient provider ethnic concordance "was not associated with

satisfaction for any of the minority groups (Black, Hispanics, or Asians) individually or for non-Whites as a whole" (Saha et al., 2003).

The 2009 Systematic Review: Questions still remain

In 2009, Meghani *et al* performed a systematic review on the association between patient-provider ethnic concordance and minority patient outcomes. The authors included patient satisfaction as an outcome. The authors were skeptical that there is an association between patient-provider ethnic concordance and patient satisfaction. They were critical of the literature because three out of the five studies were based on a single data source, the 1994 Commonwealth Minority Health Survey. They also used "non-mutually exclusive samples and outcomes" (Meghani et al., 2009). As a result of these limitations, the authors stated that the results were inconclusive (Meghani et al., 2009). Therefore, it is unclear if patient-provider ethnic concordance is associated with patient satisfaction.

The 2009 systematic review did not have patient satisfaction articles that were published after 2003. Since that time, researchers have published additional studies that may clarify the association between patient-provider ethnic concordance and patient satisfaction. An updated systematic review of the literature was performed. This review asks if patients with ethnically concordant providers are more satisfied with their health care relative to patients with ethnically discordant providers.

Methods

Eligibility Criteria

Are patients with ethnically concordant providers more satisfied with their health care relative to patients with ethnically discordant providers? Articles had to be published from 2004 to present (June 2014). This time period was chosen because the 2009 review did not have any articles that were published after 2003. Only studies performed in the US were included in this review. In countries with a more homogenous population, ethnic concordance may have a noticeably smaller role in the patient-provider relationship. .

Eligible studies must have patient-provider ethnic concordance as an independent variable. Patients' satisfaction with their health care or health care provider must be an outcome. Although these two outcomes are similar, they are not the same. To produce more eligible studies, both outcomes were included in the eligibility criteria.

Eligible studies had study populations with adults ages 18 and older. With the pediatric population the parent or guardian usually serves as a proxy for the patient. Consequently, the patient-physician relationship is quite different between adult and pediatric populations. Having a third party in pediatric visits may complicate the association between patient-provider ethnic concordance and patient satisfaction.

Eligible articles must compare at least two different ethnic groups. One of these ethnic groups must be African-American. African-Americans must be included because this ethnic group retains a prominent burden of health care disparities. No limits were

placed on study design because there are not any randomized controlled trials that research this question.

Search Strategy

PUBMED, Web of Science, and SCOPUS were searched to find potential studies (Figure 1.1). To maximize the number of biomedical search results two biomedical databases, PUBMED and Web of Science, were searched. SCOPUS is an online database like Medline, but it also includes sociological articles. Articles focusing on stereotypes and implicit racial bias served as background reading.

Our search strategy was "(Ethnic OR ethnically OR ethnicity OR race OR racially OR racial) AND (concordant OR concordance OR discordant OR discordance) AND (satisfaction OR quality OR perception OR positive affect OR patient centered)". This initial search strategy produced 302 results in PUBMED, 389 results in Web of Science, and 19 results in SCOPUS. We then restricted our search strategy for articles from 2004 to June 2014. This restriction reduced our results to 248 in PUBMED, 329 in Web of Science, and 18 in SCOPUS.

To find additional articles we searched Web of Science and SCOPUS for articles that cited Dr. Cooper's 2003 study, "Patient-Centered Communication, Ratings of Care, Concordance of Patient and Physician Race" (Figure 1.2). We did not perform this search in PUBMED because the database does not have this functionality. This search produced 361 articles in Web of Science and 408 articles in SCOPUS. These searches produced 1,364 articles for our title review.

Dr. Lisa Cooper was consulted and provided an additional 17 articles. These articles were searched to ascertain if any met the eligibility criteria. Most of the articles were published before 2004. Some articles did not focus on patient-provider ethnic concordance or patient satisfaction. Out of the 17 articles, one met the eligibility criteria. This article was found through the search strategy. The articles that did not meet the eligibility criteria were used as background reading.

Figure 1.1 Search Strategy: Search Terms

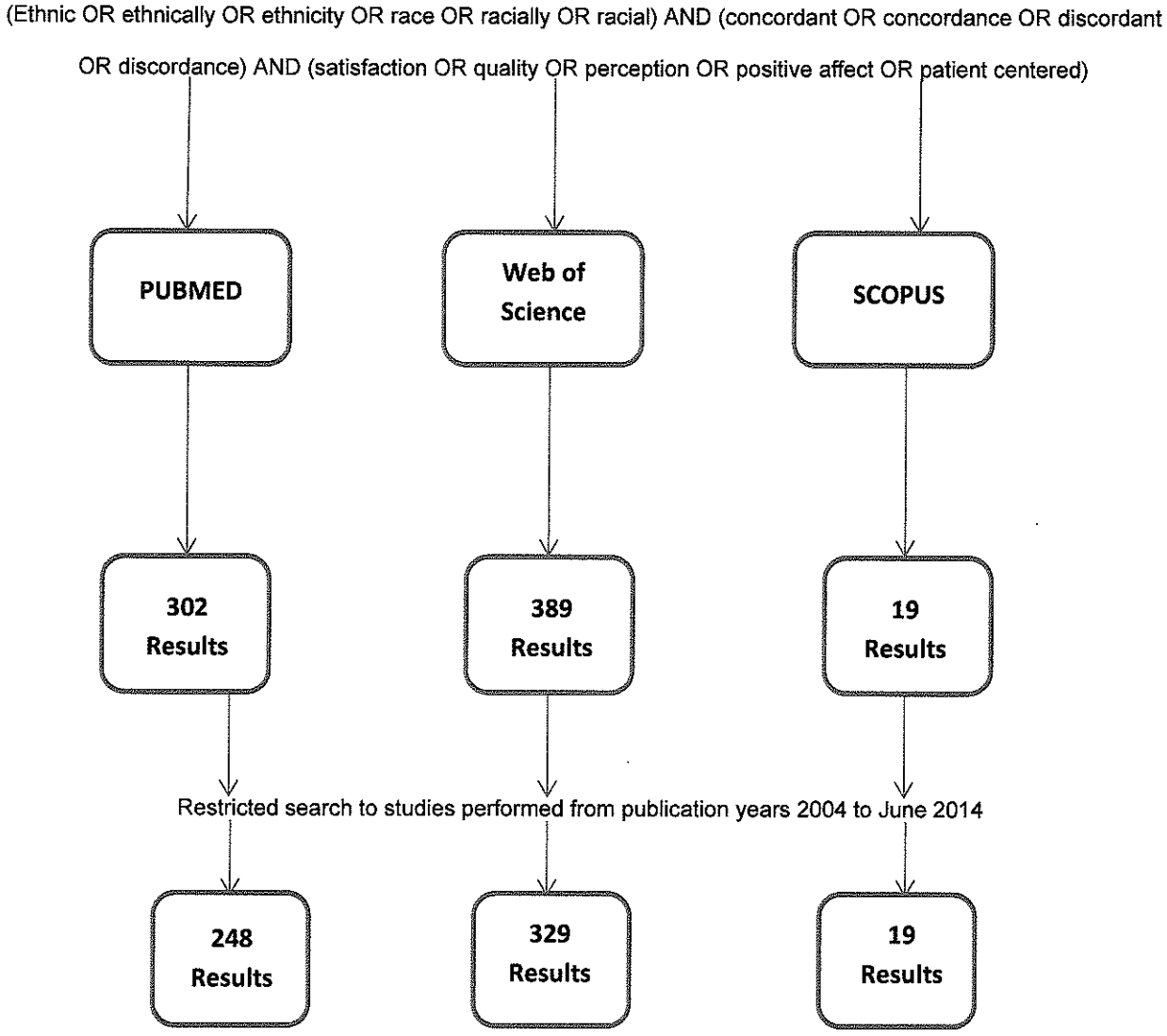
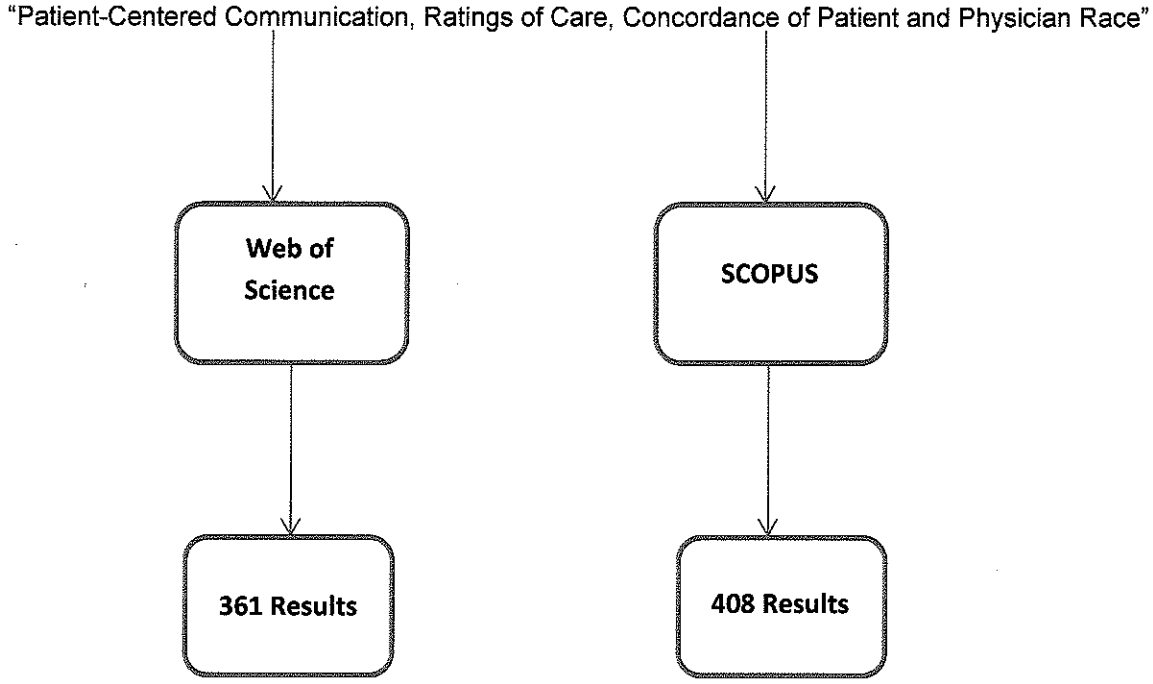


Figure 1.2 Search Strategy: Cited By



Appraisal of Individual Studies and Body of Evidence

A variation of the United States Preventive Services Task Force (USPSTF) criteria for assessing internal validity of cohort studies were used to critically appraise individual studies (USPSTF, 1999b). The USPSTF's criteria for assessing external validity were also used to critically appraise individual studies (USPSTF, 1999a). The appraisal of individual studies was based on study population selection process, study population comparability, outcome measurement, adjustments for confounders, and generalizability. We also used the USPSTF's Definition of Ratings (poor, fair, good) to grade the internal and external validity (USPSTF, 1999b).

The evidence's risk of bias, consistency, directness, and precision were used to grade the strength of a body of evidence. This approach was derived from the Agency for Healthcare Research and Quality (AHRQ) grading system (Owens et al., 2008). We

used ARHQ's Definitions of Ratings to grade the strength of evidence (Owens et al., 2008).

Article Selection Process

A single review and data abstraction of selected articles was performed. Afterwards, a title review of all non-duplicated search results was performed (Figure 2). An abstract review was performed on the studies that were selected after the title review. Potential articles were divided into the three categories of background articles, review candidate articles, or rejected articles.

To be considered a background article, the abstract did not have to mention ethnic concordance or patient satisfaction. They did have to include information about health care disparities and the patient-provider relationship. Background articles were graded from one to three. Articles that were rated as ones were very likely to be used in the review's introduction or discussion. Articles that were rated as threes were unlikely to be used in the review's introduction or discussion.

To be categorized as a review candidate article, the abstract had to mention ethnic/racial concordance, patient satisfaction, or similar keywords. A full text review of review candidate articles was performed. Data was abstracted from articles that were selected after the full text review.

Results

Figure 2: Search Results

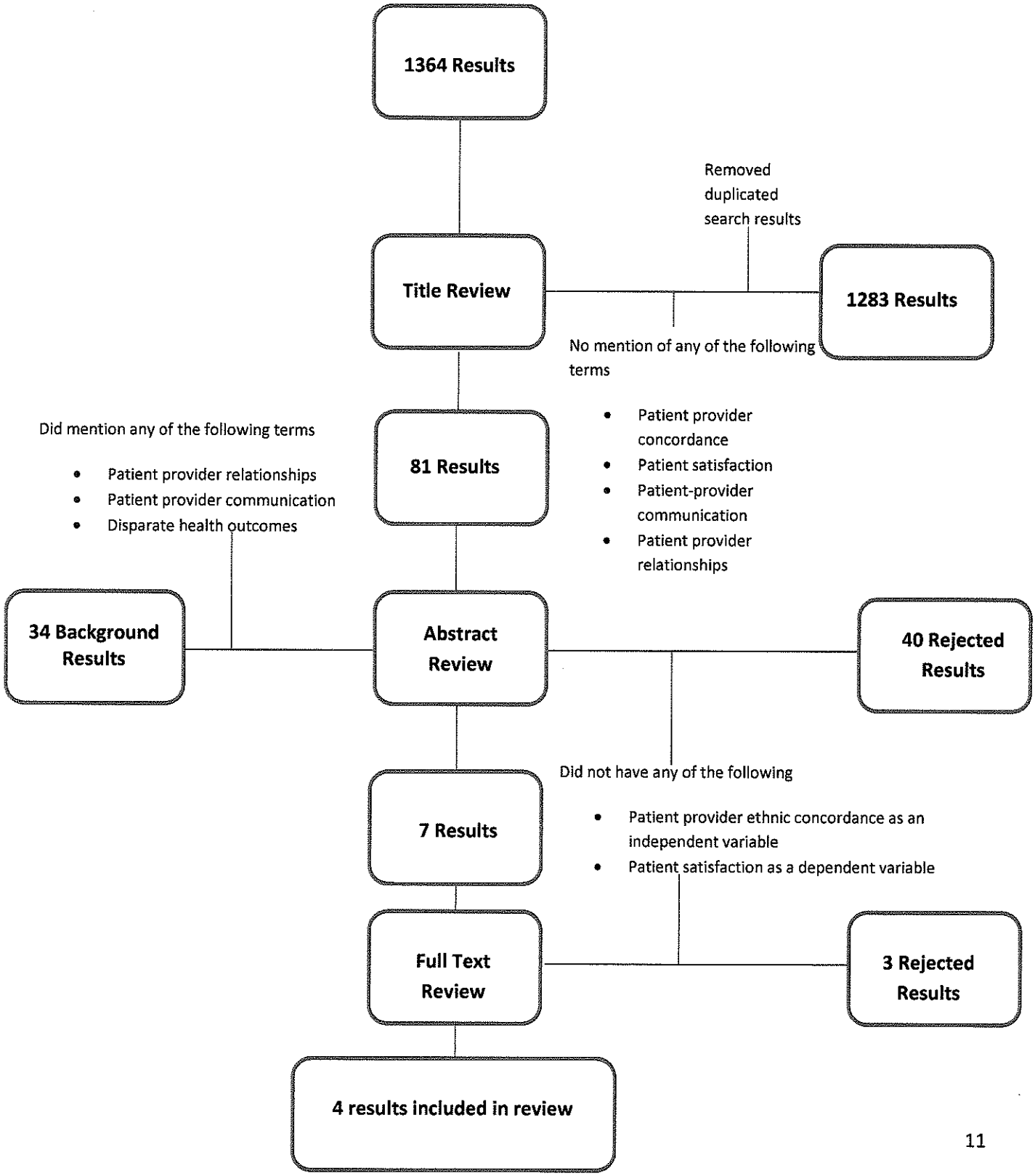


Figure 2 depicts the process of narrowing the search results to the four studies included in this review. The search strategy and eligibility criteria produced four articles. These four articles were published between 2004 and 2012. Table 1 describes each article's general study characteristics. Data that was abstracted included the number of study participants, participant demographic characteristics, and study design. Additional data can be found in Table 4 in the Appendix.

Study Characteristics

Among the four articles, the study populations' sizes varied noticeably. The smallest study had a study population of 243 participants. The largest study had a study population of 27,816 participants. Two studies included only patients in their study population (Chen, Fryer Jr., Phillips Jr., Wilson, & Pathman, 2005; Phillips, Chiriboga, & Jang, 2012). These studies did not include providers in their study population because the original data did not include provider information. Two studies included both patients and providers in their study population (Street, O'Malley, Cooper, & Haidet, 2008; Van Zanten, Boulet, & McKinley, 2004) . One of these studies used international medical graduates as providers and standardized patients as patients in their study population (Van Zanten et al., 2004).

All studies had African-American, White, and Latino participants. Looking at the four articles as a whole, there was a fairly equal representation of each race. One study had a mostly White population, and another study had a mostly African-American population. All the studies had a mostly female population. All studies had study populations that were between the ages of 18-65. Three studies used patients'

satisfaction with their health care providers as an outcome (Chen et al., 2005; Street et al., 2008; Van Zanten et al., 2004). One study used patients' satisfaction with health care quality as an outcome (Phillips, Chiriboga, & Jang, 2012).

Only two studies used a randomized scheme to select their study population (Chen et al., 2005; Phillips et al., 2012) . These studies used a random digit dialing method to select their study populations. One of the articles did not specify their selection method (Van Zanten et al., 2004). They chose all international medical graduates who took the Clinical Skills Assessment during a five year period. As a result, this study had the largest sample population (Van Zanten et al., 2004). All studies were either a secondary data analysis or a cross-sectional study.

Table 1: Study Characteristics

Citation	Number of Participants	Sample Characteristics	Design/Setting
Phillips, Chiriboga, & Jang (2012)	2075 Patients	Patients (N = 2075) • Whites = 1417 (68%) • African - Americans = 330 (16%) • Hispanics = 204 (10%) • Asian Americans = 124 (6%)	Secondary data analysis of a cross-sectional study; the Commonwealth Fund 2001 Health Care Quality Survey
Street, O'Malley, Cooper, & Haidet (2008)	214 Patients 29 Physicians	Patients (N = 214) (%) • Whites = 38 • Black = 50 • Hispanic = 12 • Asian = 0 Providers (N = 29) (%) • Whites = 31 • Blacks = 28 • Hispanic = 0 • Asian = 41	Cross-sectional study that recruited participants from 10 private and public outpatient clinics in the Houston, Texas area.
Chen, Fryer, Phillips, Wilson, & Pathman (2005)	3651 Patients	Patients (N = 3651) • Whites = 1479 (41%) • African - Americans = 1189 (33%) • Latinos = 983 (27%)	Secondary data analysis of a cross-sectional study; the 1999 Kaiser Family Foundation Survey of Race, Ethnicity, and Medical Care: Public Perceptions and Experiences

Citation	Number of Participants	Sample Characteristics	Design/Setting
Van Zanten, Boulet, & McKinley (2004)	27569 International Physician Candidates 247 Standardized Patients	Physician Candidate (N= 27,569) (%) • Whites = 38 • Black = 6 • Hispanic = 9 • Asian = 47 Standardized Patient (N= 247) (%) • Whites = 50 • Blacks =43 • Hispanic = 4 • Asian = 3	A secondary data analysis of cross-sectional study using data from the Clinical Skills Assessment (CSA) from July 1998 to December 2003

* AA = African – American

** M= Male

*** F = Female

Study Findings

The one study that analyzed patient satisfaction with health care found a negligible association with patient provider ethnic concordance (Phillips et al., 2012). The three studies that considered patient satisfaction with health care provider found three different results. One study found no association between patient-provider ethnic concordance and patient satisfaction (Street et al., 2008). One study found a negligible association (Van Zanten et al., 2004). In this study, there was a negligible association regardless of the patient's and provider's ethnicity. The other study had mixed results (Chen et al., 2005).

African-American patients who preferred and had an African-American physician were almost three times more likely to be satisfied with their health care provider (57% vs 20% P<.001) (Chen et al., 2005). The authors found a similar result for White patients. White patients who preferred and had White physicians were almost three times more likely to be satisfied with their physicians (54% vs 29% P = .03) (Chen et al., 2005). The authors did not find the same result for Latino patients (40% vs 29% P>.05).

Critical Appraisal of Studies

Table 2: Internal and External Validity Ratings of Individual Studies

Citation	Rating
Phillips, Chiriboga, & Jang (2012)	Internal Validity is Poor The study population was not comparable, but the authors adjusted for various potential confounders. The measurement tool had a low reliability because it used only one item to measure patient satisfaction. External Validity is Fair The study may differ from the US primary care population because only patients older than 50 years were included in the study population. The results are not applicable to adult patients ages 18-49. The study does not differ from the US primary care situation or providers.
Street, O'Malley, Cooper, & Haidet (2008)	Internal Validity is Poor The study population was not comparable, but the authors adjusted for various potential confounders. The authors did not specify how they measured patient satisfaction. Therefore the audience does not know the measurement tool's reliability. The authors' selection process was susceptible to bias because they selected patient as they arrived to the clinic. This selection process was not random. External Validity is Fair The study may differ from the US primary care situation because only patients from Houston were included. Thus the results may not apply to patients in other cities or states. The study does not differ from the US primary care population or providers.

Citation	Rating
Chen, Fryer, Phillips, Wilson, & Pathman (2005)	Internal Validity is Poor The study population was not comparable and the authors did not adjust for various potential confounders. The measurement tool had a low reliability because it used only one item to measure patient satisfaction. External Validity is Good The study differs minimally from the US primary care population, situation, or providers.
Van Zanten, Boulet, & McKinley (2004)	Internal Validity is Poor The audience does not know if the study population was comparable because the authors did not include a table with patient demographics. The authors did not adjust for enough cofounders. The measurement tool had a low reliability because it used only one item to measure patient satisfaction External Validity is Poor The study differs from the US primary care population/situation/providers in many ways. All providers were international medical graduates. The population was standardized patients. The situation was not based on actual patient encounters.

Table 2 is the internal and external validity ratings of the individual studies. All the studies had poor internal validity. Table 5 (in the Appendix) goes into further detail about the critical appraisal for the individual studies. All studies had participants who were not comparable for certain characteristics. For example, one study had African-Americans and Latinos patients who were younger and less educated than Caucasian patients (Phillips et al., 2012). Although having a heterogeneous population is inevitable with observational studies, it can be addressed by adjusting for potential confounders.

Two of the studies sufficiently adjusted for potential confounders, such as age and gender. The patient's self-rated health or the continuity of care's length were other important confounders for which the authors adjusted. Both of these variables can potentially influence patient satisfaction. One study did not adjust for cofounders and the other adjusted for only two confounders.

One study was rated as having good external validity. As a study it did not differ from the US primary care population, situation, or providers. Two studies were rated as having fair external validity. One study differed from the US primary care population because only patients older than 50 were in the study population. One study was rated as having poor external validity because it was based on standardized patient encounters.

All studies used a single item to measure patient satisfaction. None of the studies mentioned their measurement tools' reliability or validity. Two studies measured patient satisfaction with overall health care. One study measured patient satisfaction with the health care provider. The other study did not specify how the authors measured patient satisfaction.

The Body of Evidence's Strength

Table 6 (in the Appendix) shows the ratings for the body of evidence. The body of evidence had a high risk of bias. It was susceptible to selection bias, measurement bias, and confounding. The body of evidence had inconsistent results. One study found no association. Two studies found a negligible association. One study had mixed results. The evidence was indirect because patient satisfaction is not a health outcome.

Lastly, the evidence is imprecise because a clinically useful conclusion cannot be drawn.

Discussion

All studies have poor internal validity. One study has good external validity. The body of evidence's strength is poor. The association between patient-provider ethnic concordance and patient satisfaction remains inconclusive. One scenario exists where patients who had a racially concordant health care provider were more satisfied with their health care (Chen et al., 2005). This association may be affected by a confounder.

African-Americans and White patients who preferred and had a racially concordant health care provider were more satisfied with their health care provider (Chen et al., 2005). The authors did not find this same relationship for Latino patients. This finding is questionable because the authors did not adjust for potential confounders. They did not make adjustments because some items in the original survey questionnaire were asked only to a random half of the sample population.

Patients' racial preferences for their health care provider could be independently associated with patients' satisfaction with their health care provider. Without adjusting for patients' racial preferences, it is difficult to show that there is an association between patient-provider ethnic concordance and patient satisfaction. The same study found that for patients who had no racial preference, there was no association between patient-provider ethnic concordance and patient satisfaction (Chen et al., 2005).

This review had different results than the 2009 systematic review. In the 2009 systematic review, the studies that focused on patient satisfaction with health care

provider had either a positive association or mixed results. In the 2009 review, only the study that focused on patient satisfaction with health care found a negative association. These results suggest that patient-provider ethnic concordance may increase patients' satisfaction with their health care providers, but not substantially affect patients' satisfaction with their general health care experience. In this review there was no correlation in the findings for patient-provider ethnic concordance and patient satisfaction with the health care provider.

Limitations

Two studies did not sufficiently adjustment for potential covariates. Adjusting for more covariates could have changed the result's direction and/or magnitude. For example, the length of the patient-provider relationship may be independently associated with patient satisfaction. One study demonstrated that longer continuity of care was associated with greater patient satisfaction (Donahue, Ashkin, & Pathman, 2005). Although the length of the patient-physician relationship is a potential covariate, only one of the review articles adjusted for it.

The studies either used a one item survey to measure patient satisfaction or did not define how they measured patient satisfaction. The studies included in the 2009 review all used more than one item to measure patient satisfaction. La Veist used a 5 and 6 item scale to measure patient satisfaction in his two studies (LaVeist & Carroll, 2002; Laveist & Nuru-Jeter, 2002). Cooper used a 2 item scale to measure patient satisfaction (Cooper et al., 2003). Saha used an 8 item scale to measure patient

satisfaction (Saha et al., 1999). In this review, the tools used to measure patient satisfaction were not as reliable as the ones used in the 2009 review.

This review had various limitations. By searching three different databases, we limited our results to only published studies. As a result our review is susceptible to publication bias. Unpublished studies may have found results that are noticeably different from published works. Additionally, we had a relatively small number of studies to review. Choosing the appropriate number of studies is a balancing act. We could have had a larger number of studies to review, but we would have had very broad eligibility criteria. Without defined eligibility criteria our key question would be too nebulous to have any clinical importance.

We did not perform a dual review. Having at least two people to conduct the literature search and data abstraction would have added to the review's credibility. Another limitation was that we only performed a qualitative analysis. Hopefully as the literature grows, we will be able to quantitatively analyze it.

Another limitation is that the review used two outcomes that are similar, but not the same. Patient satisfaction with health care providers and patient satisfaction with health care experience are related, but are not the same outcome. By spending enough time with their patients and effectively communicating with them, health care providers can influence patient satisfaction with health care. Many other factors outside the patient-provider relationship also influence patient's satisfaction with health care. In order to have more eligible studies, we included both outcomes within the study question. Taking this approach could have affected the review's results. To reduce this

affect, the results were also considered based on the study's outcome. When considering the two outcomes separately, there still was no correlation in the findings.

The Clinical Importance

What is a clinically important gain in patient satisfaction? Health services researchers have been studying the association between patient-provider ethnic concordance and medication adherence. Traylor *et al* demonstrated that patient-provider ethnic concordance was not associated with CVD risk factor control or treatment intensification (Traylor et al., 2010). In another study, Traylor *et al* demonstrated that African-Americans who had a African-American health care provider were more likely to adhere to all their CVD medications (53% vs 50% $p<.05$) relative to African-Americans with racially discordant health care providers (Traylor, Schmittdiel, Uratsu, Mangione, & Subramanian, 2010).

Although a 3% increase in medication adherence is statistically significant, it does not seem clinically significant. Patients in these studies were still taking about 50% of their prescribed medication. Considering this absolute value, it doesn't seem that patient-provider concordance would lead to clinically important improvements in patient outcomes.

Jerant *et al* studied the association between patient-provider gender concordance, ethnic concordance, and health outcomes. They did not find a clinically significant association between patient-provider ethnic concordance and health outcomes. The study's secondary analysis found no statistically significant association between patient-provider ethnic concordance and change in health outcomes from year

one to year two (Jerant, Bertakis, Fenton, Tancredi, & Franks, 2011). When focusing only on minority patients, the study still did not find a statistically significant association (Jerant et al., 2011).

Looking Forward

Another reason why the question remains unanswered is because policymakers are still debating the value of measuring patient satisfaction. Some policymakers question if patient satisfaction is a true health care quality indicator. Lyu *et al* demonstrated that patient satisfaction was not associated with a hospital's surgical care quality (Lyu, Cooper, Freischlag, & Makary, 2013). Patient satisfaction was not associated with antibiotic prophylaxis (R = -.216 P =.24) or safety culture score (R = .295 P = .11). Before one can ascertain the association between patient-provider ethnic concordance and patient satisfaction, policymakers need to determine if patient satisfaction is a valid health care quality indicator.

If having an ethnically concordant provider is associated with greater patient satisfaction with the health care provider, this finding supports the efforts to improve cultural competency and physician workforce diversity. Regardless of patients' and providers' ethnicities, cultural competency training is important. From 2000 to 2004, the number of residency training programs that had cultural competency training grew by over forty percent (Betancourt, Green, Carrillo, & Park, 2005). Relative to their majority counterparts, minority physicians are more likely to serve patients from minority populations (Komaromy et al., 1996). Thus having more minority physicians will insure that traditionally underserved populations receive care. If patient-provider ethnic

concordance is associated with patient satisfaction, this finding suggests that a lack of provider diversity contributes to racial health care disparities.

Conclusion

According to the most recent literature, are patients with racially concordant providers more satisfied with their health care than those with racially discordant providers? Due to body of evidence's poor strength, the question remains unanswered.

One reason the results are inconclusive is because there are still many questions about patient satisfaction. Researchers need to determine the minimally important clinical difference for patient satisfaction. They still need to determine how to accurately and reliably measure it. Researchers need a standard tool to measure patient satisfaction. Having such a tool will help to clarify the association between patient-provider ethnic concordance and patient satisfaction.

The studies were either secondary data analyses or cross-section studies. Cohort studies could help strengthen the evidence. If an association did exist, cohort studies could suggest temporality. Researchers must adjust for all important covariates. As they learn more about the variables that influence patient satisfaction, they will be better able to adjust for them.

Until recently, researchers have not considered that discordances between patients and providers can lead to health care disparities. Patients and providers will never be completely concordant; nor should they be. That being said, even the most discordant patient-provider dyad has something in common. Whether it is having diabetes or a viral upper respiratory infection, everyone has experienced being sick.

There is a chance to bring harmony to America's health care disparities, if patients and providers begin with what they have in common.

Appendix

Table 3: PICO Table

Population	Patients older than 18 years old
Intervention	Ethnically concordant health care providers
Comparator	Patients with ethnically discordant health care providers
Outcome	Patient satisfaction with health care

Table 4: Additional Data Abstracted

Citation	Aims	Design/Setting	Major Findings	Limitations
Phillips, Chiriboga, & Jang, 2012. Satisfaction with Care: The Role of Patient-Provider Racial/Ethnic Concordance and Interpersonal Sensitivity	To examine in patients older than 50 how patients' satisfaction with care is affected by: a) Racial/ethnic concordance between the patient and provider b) Patients' perceived interpersonal sensitivity of providers	Secondary data analysis of a cross-sectional study; the Commonwealth Fund 2001 Health Care Quality Survey	The influence of patient-provider ethnic/racial concordance on satisfaction with care was negligible for all racial/ethnic groups. The influence of interpersonal sensitivity was substantial ($p < .001$) in all racial/ethnic groups Perceived interpersonal sensitivity was substantially associated with patient satisfaction for all ethnic groups βs Whites = .48 African-Americnas = .42 Latinos = .45 Asian-Americans	Satisfaction was measured using only a single item in the survey Detailed information about ethnic subgroups were missing in the data set Providers did not self-report their ethnicity. Instead patients reported their providers' ethnicities.

Citation	Aims	Design/Setting	Major Findings	Limitations
			= .49 P <.001	
Street, O'Malley, Cooper, & Haidet, 2008 Understanding Concordance in Patient-Physician Relationships: Personal and Ethnic Dimensions of Shared Identity	This study examined a) Whether patients' perceptions of similarity to their physicians predicted their ratings of quality of care b) Whether perceived similarity was influenced by racial and sexual concordance and the physician's communication	Cross-sectional study that recruited participants from 10 private and public outpatient clinics in the Houston, Texas area.	For both white and minority (African-Americans and Hispanics) patients, racial concordance was not associated with patient satisfaction (p = .43 and .79 respectively) Racial concordance was a strong predictor of perceived ethnic similarity	Being a cross-sectional study it cannot ascertain causality. All Hispanic patients and Asian physicians were in racially discordant patient-provider relationships. Study includes clinics from one city, instead of being surveying clinics across the country.

Citation	Aims	Design/Setting	Major Findings	Limitations
			(p<.001), but not perceived personal similarity. Perceived personal similarity was associated with patient trust (p<.01), satisfaction (p<.01), and likelihood to adhere (p<.01) Perceived ethnic similarity was not associated with any outcome Sex concordance was not related to either similarity measures.	

Citation	Aims	Design/Setting	Major Findings	Limitations
Chen, Fryer, Phillips, Wilson, & Pathman, 2005. Patients' Beliefs about racism, preferences for physician race, and satisfaction with care	They study aimed to answer: Are patients' beliefs about racism in the health care system associated with their preference for the race or ethnicity of their physicians, and subsequently their satisfaction with that physician?	Secondary data analysis of a cross-sectional study; the 1999 Kaiser Family Foundation Survey of Race, Ethnicity, and Medical Care: Public Perceptions and Experiences	For African-Americans and Latinos, stronger beliefs about racial discrimination in health care was associated with preferring a racially concordant physician (P<.001) For African-Americans, preferring and having a African-American physician was associated with greater patient satisfaction (57% vs 20% P<.001) African-Americans and Latinos with no racial preference rated their satisfaction with their physicians similarly regardless of	No temporal relationships can be discerned from these data. The patients reported their physicians' race and ethnicities and thus may not be accurate. There was only a 49% survey response rate. Nonresponse bias is a potential limitation They did not adjust for confounders because some survey questions were asked to a random half of the sample population.

Citation	Aims	Design/Setting	Major Findings	Limitations
			racial concordance (49% vs 50% and 52% and 51% respectively).	
Van Zanten, Boulet, & McKinley, 2004 The Influence of Ethnicity on Patient Satisfaction in a Standardized Patient Assessment	To look at possible differences in satisfaction ratings as a function of physician candidate and standardized patient ethnicity.	A secondary data analysis of cross-sectional study using data from the Clinical Skills Assessment (CSA) from July 1998 to December 2003	In general standardized patients provided higher satisfaction ratings for racially concordant pairings, but the effects at the encounter level were reasonably small (at most 2% higher than average) There was a significant interaction between standardized patients and candidate ethnicity (F = 21.3 P<.01) There was a statistically significant main effect for SP ethnicity (F = 24.9,	The results are based on simulated cases and may not be generalizable to actual patient encounters. There were two different methods to determine candidate ethnicity. For analyses, the authors used the candidate's self-report. During the CSA, the standardized patients used their own judgment to define candidate ethnicity. Only adjusted for two covariates; interpersonal skills, and spoken-English proficiency ratings. The authors did not adjust for candidate's history taking skill

Citation	Aims	Design/Setting	Major Findings	Limitations
			p<.01)	and physical examination ability. This study's results do not apply to US trained medical graduates because the study sample was international medical graduates.

Table 5: Critical Appraisal of Individual Studies

Citation	Selection Process	Comparability of Subjects	Outcome Measurement	Adjustment for Confounding	Generalizability
Phillips, Chiriboga, & Jang (2012)	The original survey sample was drawn by using a standard list-assisted random digit dialing (RDD) methodology	Relative to Whites, African-Americans and Hispanics were significantly younger (p<.05 & p<.001 respectively) Relative to Whites, African-Americans and Hispanics had significantly lower levels of education (p<.001) Relative to Whites, African Americans and Hispanics had significantly lower self-rated health (p<.001) Relative to White, African-Americans, Hispanics, and Asian Americans were	Patient satisfaction was measured by a single item on the survey. "How satisfied are you with the quality of health care that they had received during the last 2 years?" Rating was from 1-3. 1 = dissatisfied 2= somewhat satisfied 3= very satisfied This study measured patient satisfaction with their health care in general and not with a specific health care provider The authors did not mention the their	Yes Adjusted for: • Age • Gender • Marital status • Education • Self-rated health	The study population was any adult older aged 50 years and older that had a telephone and could speak English, Spanish, Cantonese, Mandarin, Korean, or Vietnamese. The refusal rate was 45.7% The study population was a nationally representative group of people living in the continental US This intervention does not require provider training as it is based on patient-provider ethnic concordance.

Citation	Selection Process	Comparability of Subjects	Outcome Measurement	Adjustment for Confounding	Generalizability
		significantly more likely to be in a patient-provider discordant relationship (p<.001)	measurement tool's reliability or validity		
Street, O'Malley, Cooper, & Haidet (2008)	The researchers sent flyers to various clinics inviting them to one of several luncheons. At the luncheons, the physicians received an overview of the project. Physicians who could not make the luncheon were invited by telephone. The researchers recruited one patient/half-day at clinics with physicians who agreed to participate in the study. The researchers	All Hispanic patients and Asian physicians were in racially discordant consultations Patients more likely to be in sex-concordant encounters were women (P<.001) and younger (P<.05)	The authors did not specify how patient satisfaction was measured	Yes Adjusted for: • Demographic traits (Physicians' and Patients') • Number of Prior Visits with the doctor • Physician's patient-centered communication • Patient-Provider Racial Concordance • Patient's perception of personal and ethnic similarity with their physicians	The study population was any adult older than 18 years old. The study population had to speak English. The refusal rate was not specified The study population were from 10 primary care clinics in the Houston Texas area This intervention does not require provider training as it is based on patient-provider ethnic concordance.

Citation	Selection Process	Comparability of Subjects	Outcome Measurement	Adjustment for Confounding	Generalizability
	approached potential participants as they arrived for their visits.				
Chen, Fryer, Phillips, Wilson, & Pathman (2005)	The original sample is based on a disproportionately stratified random-digit sample of telephone numbers. This sample was intentionally disproportionate to allow for an oversampling of African-American and Latino patients.	Relative to Whites, African-Americans and Latinos were younger, poorer, more likely to prefer a same race doctor and less likely to have racial concordance with their physicians. (No P values provided) Relative to Whites and African-Americans, Latinos were less educated, less likely to have a regular doctor, less likely to have a racial preference for their physicians, and	Patient satisfaction was measured by asking the interviewee to rate their satisfaction with their physician using a letter grade rating system. "A" was for excellent and "F" for failing. The authors chose to characterize patient satisfaction as patients rating "A" or excellent vs all other ratings because patient satisfaction tended toward the positive. This study	No	The study population was adults ages 18 years and older. The study population had to speak either English or Spanish. The refusal rate was 51% The study population was nationally representative This intervention does not require provider training as it is based on patient-provider ethnic concordance.

Citation	Selection Process	Comparability of Subjects	Outcome Measurement	Adjustment for Confounding	Generalizability
		had lower self-rated health.	measured patient satisfaction with their health care provider and not their health care in general. The authors did not mention the reliability or validity of their measurement tool		
Van Zanten, Boulet, & McKinley (2004)	There was not a selection process. The authors used data from all the international medical school graduates taking the clinical skills assessment from July 1998 to December 2003	The study did not include a table one with candidate and standardized patient demographic characteristics	Satisfaction was based on the likelihood to return to the physician for future care. The standardized patients rated patient satisfaction on a five point scale. 1 = Definitely no/overwhelming doubt of examinee's competence and/or interpersonal abilities 5 = Definitely	Yes. Although they adjusted for covariatess, there were only two adjusted covariates. The authors adjusted for candidate's interpersonal skills and spoken-English proficiency ratings.	The study population was international medical graduates who took the CSA from July 1998 to December 2003. The refusal rate was zero because there was not a selection process. The study population was nationally representative This intervention does not require provider training as it is based on patient-provider ethnic concordance.

Citation	Selection Process	Comparability of Subjects	Outcome Measurement	Adjustment for Confounding	Generalizability
			yes/Strong sense of competence and interpersonal abilities This study measured patient satisfaction of the health care provider and not the health care system in general The authors did not mention their measurement tool's reliability or validity		

Table 6: Strength of the Evidence

Domains	Rating
Risk of Bias	High risk of bias All the studies had poor internal validity. Their results were susceptible to selection bias, measurement bias, and confounding. The evidence was susceptible to selection bias because the selection process was not random in one of the studies. The evidence was susceptible to measurement bias because all the measurement tools had low reliability. They were based on one question. Two studies either did not adjust for confounders or insufficiently adjusted for them.
Consistency	Inconsistent Two studies found a negligible association between patient-provider ethnic concordance and patient satisfaction with health care. One study found no association. One study found an association, but it was only true for certain populations.
Directness	Indirect The evidence is indirect because patient satisfaction with health care is not a health outcome.
Precision	Imprecise The evidence is imprecise because it does not allow for a clinically useful conclusion.

References

1. Betancourt, J. R., Green, A. R., Carrillo, J. E., & Park, E. R. (2005). Cultural competence and health care disparities: Key perspectives and trends. *Health Affairs (Project Hope), 24*(2), 499-505. doi:24/2/499 [pii]

2. Blendon, R. J., Aiken, L. H., Freeman, H. E., & Corey, C. R. (1989). Access to medical care for black and white americans. A matter of continuing concern. *JAMA : The Journal of the American Medical Association, 261*(2), 278-281.

3. Cannon, B., & Usherwood, T. P. (2007). General practice consultations - how well do doctors predict patient satisfaction? *Australian Family Physician, 36*(3), 185-6, 192.

4. Centers for Medicare and Medicaid Services. (2011). Hospital value-based purchasing program. Retrieved from http://www.cms.gov/Outreach-and-Education/Medicare-Learning-Network-MLN/MLNProducts/downloads/Hospital_VBPurchasing_Fact_Sheet_ICN907664.pdf

5. Centers for Medicare and Medicaid Services. (2014). Hospital consumers assessment of healthcare provider and systems survey: Executive insight. Retrieved from http://www.hcahpsonline.org/home.aspx#background

6. Chen, F. M., Fryer Jr., G. E., Phillips Jr., R. L., Wilson, E., & Pathman, D. E. (2005). Patients' beliefs about racism, preferences for physician race, and satisfaction with care. *Annals of Family Medicine, 3*(2), 138-143.

7. Cleary, P. D., & McNeil, B. J. (1988). Patient satisfaction as an indicator of quality care. *Inquiry : A Journal of Medical Care Organization, Provision and Financing, 25*(1), 25-36.

8. Cooper, L. A., Roter, D. L., Johnson, R. L., Ford, D. E., Steinwachs, D. M., & Powe, N. R. (2003). Patient-centered communication, ratings of care, and concordance of patient and physician race. *Annals of Internal Medicine, 139*(11), 907-915. doi:139/11/907 [pii]

9. Donahue, K. E., Ashkin, E., & Pathman, D. E. (2005). Length of patient-physician relationship and patients' satisfaction and preventive service use in the rural south: A cross-sectional telephone study. *BMC Family Practice, 6*, 40. doi:1471-2296-6-40 [pii]

10. Institute of Medicine. (2001). *Crossing the quality chasm: A new health system for the 21st century.* (). Washington, D.C.: National Academies Press.

11. Jerant, A., Bertakis, K. D., Fenton, J. J., Tancredi, D. J., & Franks, P. (2011). Patient-provider sex and race/ethnicity concordance: A national study of healthcare and outcomes. *Medical Care, 49*(11), 1012-1020. doi:10.1097/MLR.0b013e31823688ee [doi]

12. Komaromy, M., Grumbach, K., Drake, M., Vranizan, K., Lurie, N., Keane, D., & Bindman, A. B. (1996). The role of black and hispanic physicians in providing health care for underserved populations. *The New England Journal of Medicine, 334*(20), 1305-1310. doi:10.1056/NEJM199605163342006 [doi]

13. LaVeist, T. A., & Carroll, T. (2002). Race of physician and satisfaction with care among african-american patients. *Journal of the National Medical Association, 94*(11), 937-943.

14. Laveist, T. A., & Nuru-Jeter, A. (2002). Is doctor-patient race concordance associated with greater satisfaction with care? *Journal of Health and Social Behavior, 43*(3), 296-306.

15. Lyu, H., Cooper, M., Freischlag, J. A., & Makary, M. A. (2013). Patient satisfaction as a possible indicator of quality surgical care--reply. *JAMA Surgery, 148*(10), 986-987. doi:10.1001/jamasurg.2013.3411 [doi]

16. Meghani, S. H., Brooks, J. M., Gipson-Jones, T., Waite, R., Whitfield-Harris, L., & Deatrick, J. A. (2009). Patient-provider race-concordance: Does it matter in improving minority patients' health outcomes? *Ethnicity & Health, 14*(1), 107-130. doi:10.1080/13557850802227031 [doi]

17. Merkel, W. T. (1984). Physician perception of patient satisfaction. do doctors know which patients are satisfied? *Medical Care, 22*(5), 453-459.

18. Owens, D. K., Lohr, K. N., Atkins, D., Treadwell, J. R., Reston, J. T., Bass, E. B., . . . Helfand, M. (2008). Grading the strength of a body of evidence when comparing medical interventions. *Methods guide for effectiveness and comparative effectiveness reviews* (). Rockville (MD): doi:NBK47091 [bookaccession]

19. Phillips, K. L., Chiriboga, D. A., & Jang, Y. (2012). Satisfaction with care: The role of patient-provider racial/ethnic concordance and interpersonal sensitivity. *Journal of Aging and Health, 24*(7), 1079-1090. doi:0898264312453068 [pii]

20. Rashid, A., Forman, W., Jagger, C., & Mann, R. (1989). Consultations in general practice: A comparison of patients' and doctors' satisfaction. *BMJ (Clinical Research Ed.), 299*(6706), 1015-1016.

21. Saha, S., Arbelaez, J. J., & Cooper, L. A. (2003). Patient-physician relationships and racial disparities in the quality of health care. *American Journal of Public Health, 93*(10), 1713-1719.

22. Saha, S., Komaromy, M., Koepsell, T. D., & Bindman, A. B. (1999). Patient-physician racial concordance and the perceived quality and use of health care. *Archives of Internal Medicine, 159*(9), 997-1004.

23. Street, R. L.,Jr, O'Malley, K. J., Cooper, L. A., & Haidet, P. (2008). Understanding concordance in patient-physician relationships: Personal and ethnic dimensions of shared identity. *Annals of Family Medicine, 6*(3), 198-205. doi:10.1370/afm.821 [doi]

24. Traylor, A. H., Schmittdiel, J. A., Uratsu, C. S., Mangione, C. M., & Subramanian, U. (2010). Adherence to cardiovascular disease medications: Does patient-provider race/ethnicity and language concordance matter? *Journal of General Internal Medicine, 25*(11), 1172-1177. doi:10.1007/s11606-010-1424-8

25. Traylor, A. H., Subramanian, U., Uratsu, C. S., Mangione, C. M., Selby, J. V., & Schmittdiel, J. A. (2010). Patient race/ethnicity and patient-physician race/ethnicity concordance in the management of cardiovascular disease risk factors for patients with diabetes. *Diabetes Care, 33*(3), 520-525. doi:10.2337/dc09-0760

26. USPSTF. (1999a). Criteria for assessing external validity (generalizability) of individual studies. Retrieved from http://www.uspreventiveservicestaskforce.org/uspstf08/methods/procmanualap8.htm

27. USPSTF. (1999b). Criteria for assessing internal validity of individual studies. Retrieved from http://www.uspreventiveservicestaskforce.org/uspstf08/methods/procmanualap7.htm

28. Van Zanten, M., Boulet, J. R., & McKinley, D. W. (2004). The influence of ethnicity on patient satisfaction in a standardized patient assessment. *Academic Medicine, 79*(10), S15-S17. doi:10.1097/00001888-200410001-00005